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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,374	07/06/2001	Krishnan Kumaran	15-11	4294

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Docket Administrator (Rm. 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733

EXAMINER	
DANIEL JR, WILLIE J	

ART UNIT	PAPER NUMBER
2686	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Supplemental **Office Action Summary**	Application No. 09/900,374	Applicant(s) KUMARAN ET AL.	
	Examiner Willie J. Daniel, Jr.	Art Unit 2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-33 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-33 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 October 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Supplemental Action

1. This supplemental action is to correct errors in and replaces the non-final action mailed on 21 May 2004.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 06 July 2001 is in compliance with the provisions of 37 CFR 1.97 and is being considered by the examiner.

Drawings

3. The drawings are objected to because Fig. 4 "step 24" uses "evolation". Examiner suggests using "evolution". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:
    a. Fig. 3 "ref. 10" is not in specification.
    b. Fig. 11 "ref. 100" is not in specification.

    A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

   a. Fig. 1 does not show "ref. 2" as stated on pg. 3, line 25.

   b. Fig. 5 does not show "ref. 30" as stated on pg. 7, line 28.

   A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

   a. The application number is missing on pg. 1, line 3.

   b. "MB_1 - MB_2" on pg. 6, line 2 is shown as Fig. 3 "DB_1 - DB_2".

   Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 15-18, 24-26, 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Borst et al. (hereinafter Borst), Bell Labs Technical Journal, "Wireless Simulation and Self-Organizing Spectrum Management", Vol. 2, No. 3, 1997, pp. 81-98.

Regarding **Claim 1**, Borst discloses a process for assigning frequency channels to communications in a cellular wireless system, comprising:

performing a simulation of the system to produce a plurality of lists of channel rankings, the simulation evolving the lists according to an algorithm that dynamically reduces inter-communication interference, ones of the lists of channel rankings prioritizing the channels to service communications by associated ones of the base stations (see pg. 82, right col., lines 18-25; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31), where the algorithm of the simulation tool organizes a lists of channels according to interference measurements for the base stations of the network; and

assigning the lists of produced channel rankings to associated base stations that are configured to assign channels to service communications with mobile units based on the channel ranking in the associated assigned ones of the lists (see pg. 82, right col., lines 18-25; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31), where the lists are used to allocate channels to mobile units operating in a sector of a base station.

Regarding **Claim 2**, Borst discloses the process of claim 1, wherein the evolving is constrained to produce less than a preselected amount of call blocking and/or call dropping (see pg. 87, left col., line 34 - right col., line 5; pg. 90, left col., lines 41-44; pg. 94, left col., line 30 - right col., line 1; pg. 95, left col., lines 1-3,7-10; Figs.7-8), where the simulation tool monitors the blocking of calls for a maximum amount of times and dropping of calls according to the threshold along with interference.

Regarding **Claim 3**, Borst discloses the process of claim 1, wherein one of the produced lists of channel rankings separately ranks the channels for separate angular sectors of the associated base station (see pg. 83, lines 5-16; pg. 84, right col., lines 22-31; Fig. 1), where the system organizes the channels on a per sector basis by considering the neighbor station for improving network performance.

Regarding **Claim 4**, Borst discloses the process of claim 3, wherein the performing includes producing a list that serially ranks the channels for usage in servicing wireless communications (see pg. 84, right col., lines 22-31), where the channels are ranked in order of interference measurements.

Regarding **Claim 15**, Borst discloses a computer memory which reads on the claimed "program storage device" encoding a computer executable program of instructions to rank frequency channels of a cellular wireless system to cause the computer to (see pg. 82, right col., lines 25-29; pg. 90, lines 2-4,21), where the simulation tool is a program in which the instructions would be inherent:

perform a simulation of the system to produce a plurality of lists of channel rankings, the simulation evolving the lists according to an algorithm that dynamically reduces inter-communication interference, ones of the lists of channel rankings prioritize the channels to service communications by associated ones of the base stations (see pg. 82, right col., lines 18-25; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31), where the algorithm of the simulation tool organizes a list of channels according to interference measurements for the base stations of the network; and

assign the lists of produced channel rankings to the base stations for use in assigning channels to service communications with mobile units (see pg. 82, right col., lines 18-25; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31), where the lists are used to allocate channels to mobile units operating in a sector of a base station.

Regarding **Claim 16**, Borst discloses the device of claim 15, wherein the simulation evolves the lists without producing more than a preselected amount of call blocking and/or call dropping (see pg. 87, left col., line 34 - right col., line 5; pg. 90, left col., lines 41-44; pg. 94, left col., line 30 - right col., line 1; pg. 95, left col., lines 1-3,7-10; Figs.7-8), where the simulation tool monitors the blocking of calls for a maximum amount of times and dropping of calls according to the threshold along with interference.

Regarding **Claim 17**, Borst discloses the device of claim 15, wherein one of the produced lists of channel rankings separately ranks the channels for separate angular sectors of the associated base station (see pg. 83, lines 5-16; pg. 84, right col., lines 22-31; Fig. 1), where the system organizes the channels on a per sector basis by considering the neighbor station for improving network performance.

Regarding **Claim 18**, Borst discloses the device of claim 17, wherein the instruction to perform produces a list that serially rankings of the channels for usage in servicing wireless communications (see pg. 84, right col., lines 22-31), where the channels are ranked in order of interference measurements in which the instruction would be inherent.

Regarding **Claim 24**, Borst discloses a channel allocation system for ranking frequency channels for usage by base stations of a cellular wireless system, comprising:

a processor configured to dynamically simulate the cellular wireless system according to an algorithm that dynamically produces lists of frequency channel rankings for individual base stations in a manner that reduces inter-call interference (see pg. 82, right col., lines 20-29,40-43; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31; Fig. 3), where the algorithm of the simulation tool organizes lists of channels according to interference measurements for the base stations of the network in which the processor would be inherent to run the program.

Regarding **Claim 25**, Borst discloses the allocation system of claim 24, further comprising:

a link coupling the processor to the base stations, the link supporting transmissions of input data on the cellular wireless system to the processor and transmissions of the produced lists of channel rankings to the base stations, the processor configured to use the input data to determine a starting state for the dynamical simulation (see pg. 82, right col., lines 19-36,40-43; pg. 83, right col., lines 5-16; pg. 84, left col., line 84 - right col., line 31; pg. 90, right col., lines 18-26; Figs. 1-3, 5, and 6), where the computer dynamically allocates channel lists to the base stations for communicating with mobile units of each sector in which

the link for coupling the processor of the computer would be inherent. The simulation tool monitors the current status of information provided by the base stations for quantifying the global network.

Regarding **Claim 26**, Borst discloses the allocation system of claim 24, wherein the processor is configured to produce separate lists that rank the frequency channels for use in separate angular sectors of at least one of the base stations in assigning channels to support communications (see pg. 83, lines 5-16; pg. 84, right col., lines 22-31; Figs. 1 and 3), where the simulation tool of the network organizes the channels on a per sector basis by considering the neighbor station for improving network performance in which the processor would be inherent.

Regarding **Claim 28**, Borst discloses the allocation system of claim 26, wherein the processor is configured to perform the dynamical simulation based on an event queue containing events for simulating processing of communications with mobile units (see pg. 82, right col., lines 33-36,40-43; pg. 84, left col., line 17 - right col., line 10; pg. 85, right col., lines 19-23,28-40; pg. 87, left col., lines 5-32, right col., lines 16-20; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; Figs. 1, 3, 5, and 6), where the simulation tool uses parameters to monitor the system while collecting event statistics of the mobile units and base stations located within the network

Regarding **Claim 29**, Borst discloses a process for assigning frequency channels to communications in a cellular wireless system (see pg. 82, right col., lines 18-29), comprising:

performing an iterative algorithm to produce a plurality of lists of channel rankings, the algorithm evolving the lists according to reduce inter-communication interference, ones of the lists of channel rankings prioritizing the channels to service communications by associated ones of the base stations (see pg. 82, right col., lines 18-25; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31), where the algorithm of the simulation tool organizes a list of channels according to interference measurements for the base stations of the network. As the network changes, the algorithm adjusts the system to dynamically adapt to the changes in which the iteration would be inherent. ; and

assigning the lists of produced channel rankings to associated ones of the base stations, the base stations being configured to assign channels to service communications with mobile units based on the rankings in the associated ones of the lists (see pg. 82, right col., lines 18-25; pg. 83, right col., lines 5-16; pg. 84, right col., lines 22-31), where the lists are used to allocate channels to mobile units operating in a sector of a base station.

Regarding **Claim 30**, Borst discloses the process of claim 29, wherein the algorithm is constrained to produce less than a preselected amount of communication blocking and/or dropping (see pg. 87, left col., line 34 - right col., line 5; pg. 90, left col., lines 41-44; pg. 94, left col., line 30 - right col., line 1; pg. 95, left col., lines 1-3,7-10; Figs.7-8), where the simulation tool monitors the blocking of calls for a maximum amount of times and dropping of calls according to the threshold along with interference.

Regarding **Claim 31**, Borst discloses the process of claim 29, wherein one of the produced lists of channel rankings separately ranks the channels for separate angular sectors of the associated base station (see pg. 83, lines 5-16; pg. 84, right col., lines 22-31; Fig. 1),

where the system organizes the channels on a per sector basis by considering the neighbor station for improving network performance.

Regarding **Claim 32**, Borst discloses the process of claim 31, wherein the performing includes producing a list that serially ranks the channels for usage in servicing wireless communications (see pg. 84, right col., lines 22-31), where the channels are ranked in order of interference measurements.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-13, 19-23, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borst et al. (hereinafter Borst), Bell Labs Technical Journal, "Wireless Simulation and Self-Organizing Spectrum Management", Vol. 2, No. 3, 1997, pp. 81-98 in view of Jensen (US 6,496,698).

Regarding **Claim 5**, Borst teaches of identifying the produced lists of channel rankings (see pg. 84, right col., lines 22-31), where the lists of channels are ranked according to interference. Borst fails to disclose converging to a fixed point for evolution of the lists of channel rankings. However, the examiner maintains that converging to a fixed point for evolution of the lists of channel rankings was well known in the art, as taught by Jensen.

In the same field of endeavor, Jensen teaches of converging to a particular point which reads on the claimed "fixed point" for evolution of the lists of frequency groups which reads on the claimed "channel" rankings (see col. 6, lines 11-47; col. 13, line 47 - col. 14, line 30; Figs. 3-5), where the software iterates through changes for optimization of the cell, sector, and system to find the best change to be made for reaching a particular point.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borst and Jensen to have converging to a

fixed point for evolution of the lists of channel rankings, in order to find the particular point for best result as taught by Jensen.

Regarding **Claim 6**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, wherein the performing comprises:

determining quantities that characterize communications serviced by one of the angular sectors, individual ones of the quantities being indicative of potential inter-call interference for calls serviced by associated ones of the frequency channels (see pg. 83, right. col., lines 5-14; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; pg. 94, right col., lines 13-19; Figs. 3 and 5), where the simulation tool of the system monitors events to minimize interference between channels of the list; and

re-ranking the list of frequency channels associated with the one of the angular sectors based on the determined quantities (see pg. 83, right col., lines 5-14; pg. 84, left col., line 17 - right col., line 10; pg. 84, right col., lines 22-30; pg. 85, right col., line 43-45; pg. 86, right col., line 4 - pg. 87, left col., line 8; pg. 87, right col., lines 41-43; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; pg. 94, right col., lines 13-19; Figs. 3 and 5), where the simulation monitors changes in the system for ranking channels based on events in which the re-ranking would be inherent as the system changes due to the events monitored.

Regarding **Claim 7**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, wherein the performing comprises:

providing a propagation which reads on the claimed "fading matrix" for the system (see pg. 87, right col., lines 7-24,39-43; pg. 88, left col., lines 22-27, 33 - right col. line 40; Fig. 4); and

wherein the performing includes assigning new calls to base stations based in part on the fading matrix (see pg. 84, right col., lines 12-19,41-43; pg. 85, right col., lines 16-23; pg. 87, right col., lines 7-24,39-43; pg. 88, left col., lines 22-27, 33 - right col. line 40; Figs. 3 and 4), where the simulation takes into account fading for assigning channels to new call.

Regarding **Claim 8**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, further comprising:

providing input data on locations of base stations and distributions of mobile units (see pg. 84, left col., line 17 - right col., line 10; pg. 85, right col., lines 19-23,28-40; pg. 87, left col., lines 5-32, right col., lines 16-20; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; Figs. 1, 3, 5, and 6), where the simulation tool uses parameters to monitor the system while collecting event statistics of the mobile units and base stations location within the network; and

wherein the performing is based in part on the provided input data (see pg. 84, left col., line 17 - right col., line 10; pg. 85, right col., lines 19-23,28-40; pg. 87, left col., lines 5-32, right col., lines 16-20; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; Figs. 1, 3, 5, and 6).

Regarding **Claim 9**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of

claim 5, wherein the performing includes simulating a retrialing mode which reads on the claimed "redialing" of blocked calls (see pg. 87, left col., line 34 - right col., line 5; Fig. 3), where the simulation tool has a retrialing mode that simulates the redialing of blocked calls.

Regarding **Claim 10**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, wherein the performing includes simulating maintenance processing of calls based on associated power levels (see pg. 85, left col., lines 1-6,21-23; pg. 89, left col., line 11 - right col., line 9; Fig. 3), where the simulation monitors the interference in correlation to the power level.

Regarding **Claim 11**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, wherein the performing includes assigning new calls according to a time division-multiplexing scheme (see pg. 83, right col., lines 5-16; pg. 84, right col., lines 12-30; Fig. 2).

Regarding **Claim 12**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, further comprising:

servicing new calls in the base stations based on priorities derived from the assigned lists of channel rankings (see pg. 84, right col., lines 12-30), where the calls are assigned to channels of the list according to the interference measurements.

Regarding **Claim 13**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further discloses the process of claim 5, wherein the algorithm lowers interference based solely on uplink communications

(see pg. 84, right col., lines 22-27; pg. 85, left col., lines 1-38; pg. 86, left col., line 7 - right col., line 2; pg. 94, right col., lines 8-11), where the algorithm for the simulation tool uses the uplink measurements for assigning the channels on the list to lower interference.

Regarding **Claim 19**, Borst teaches of wherein the instruction to perform causes the computer to identify the produced lists of channel rankings (see pg. 84, right col., lines 22-31), where the lists of channels are ranked according to interference in which the instructions would be inherent. Borst fails to disclose converging to a fixed point for evolution of the lists of channel rankings. However, the examiner maintains that converging to a fixed point for evolution of the lists of channel rankings was well known in the art, as taught by Jensen.

Jensen further teaches of converging to a particular point which reads on the claimed "fixed point" for evolution of the lists of frequency groups which reads on the claimed "channel" rankings (see col. 6, lines 11-47; col. 13, line 47 - col. 14, line 30; Figs. 3-5), where the software iterates through changes for optimization of the cell, sector, and system to find the best change to be made for reaching a particular point.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borst and Jensen to have converging to a fixed point for evolution of the lists of channel rankings, in order to find the particular point for best result as taught by Jensen.

Regarding **Claim 20**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 19), in addition Borst further discloses the device of claim 19, wherein the instruction to perform further causes the computer to:

determine quantities that characterize communications serviced by one of the angular sectors, individual ones of the quantities being indicative of potential inter-call interference for calls serviced by associated ones of the frequency channels (see pg. 83, right. col., lines 5-14; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; pg. 94, right col., lines 13-19; Figs. 3 and 5), where the simulation tool of the system monitors events to minimize interference between channels of the list; and

re-rank the list of frequency channels associated with the one of the angular sectors based on the determined quantities (see pg. 83, right col., lines 5-14; pg. 84, left col., line 17 - right col., line 10; pg. 84, right col., lines 22-30; pg. 85, right col., line 43-45; pg. 86, right col., line 4 - pg. 87, left col., line 8; pg. 87, right col., lines 41-43; pg. 90, left col., lines 41-45, right col., lines 1-31; pg. 91, right col., lines 4-10; pg. 94, right col., lines 13-19; Figs. 3 and 5), where the simulation monitors changes in the system for ranking channels based on events in which the re-ranking would be inherent as the system changes due to the events monitored.

Regarding **Claim 21**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 19), in addition Borst further discloses the device of claim 19, wherein the instruction to perform causes simulated redialing of blocked calls (see pg. 87, left col., line 34 - right col., line 5; Fig. 3), where the simulation tool has a retrialing mode that simulates the redialing of blocked calls in which the instructions would be inherent.

Regarding **Claim 22**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 19), in addition Borst further the device of claim 19,

wherein the instruction to perform causes simulated maintenance processing of calls based on associated power levels (see pg. 85, left col., lines 1-6,21-23; pg. 89, left col., line 11 - right col., line 9; Fig. 3), where the simulation monitors the interference in correlation to the power level.

Regarding **Claim 23**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 19), in addition Borst further the device of claim 19, wherein the instruction to perform causes processing of simulated calls according to a time division-multiplexing scheme (see pg. 83, right col., lines 5-16; pg. 84, right col., lines 12-30; Fig. 2).

Regarding **Claim 33**, Borst teaches of identifying the produced lists of channel rankings (see pg. 84, right col., lines 22-31), where the lists of channels are ranked according to interference. Borst fails to disclose converging to a fixed point for evolution of the lists of channel rankings. However, the examiner maintains that converging to a fixed point for evolution of the lists of channel rankings was well known in the art, as taught by Jensen.

Jensen further teaches of converging to a particular point which reads on the claimed "fixed point" for evolution of the lists of frequency groups which reads on the claimed "channel" rankings (see col. 6, lines 11-47; col. 13, line 47 - col. 14, line 30; Figs. 3-5), where the software iterates through changes for optimization of the cell, sector, and system to find the best change to be made for reaching a particular point.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borst and Jensen to have converging to a

fixed point for evolution of the lists of channel rankings, in order to find the particular point for best result as taught by Jensen.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borst et al. (hereinafter Borst), Bell Labs Technical Journal, "Wireless Simulation and Self-Organizing Spectrum Management", Vol. 2, No. 3, 1997, pp. 81-98 and Jensen (US 6,496,698) as applied to claim 5 above, and further in view of Anderson et al. (hereinafter Anderson) (EP 0817521 A2).

Regarding **Claim 14**, the combination of Borst and Jensen discloses every limitation claimed, as applied above (see claim 5), in addition Borst further of the algorithm monitoring the interference of the downlink (see pg. 84, right col., lines 22-27; pg. 85, left col., lines 1-38; pg. 86, right col., lines 1-2; pg. 95, left col., lines 15-18), where the algorithm monitors the downlink quality with the current simulation tool. The combination of Borst and Jensen fails to disclose lowering the interference based on the downlink. However, the examiner maintains that lowering the interference based on the downlink was well known in the art, as taught by Anderson.

In the same field of endeavor, Anderson teaches of lowering the interference based on the downlink (see pg. 3, lines 20-40,44-50; pg. 4, lines 12-20,29-32; pg. 5, lines 6-9,13-55; Claims 20-21; Fig. 2), where the channels are prioritized in list according to the downlink.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borst, Jensen, and Anderson for lowering the interference based on the downlink, in order to have a dynamic allocation of

channel assignments in a wireless communication network based on the downlink as taught by Anderson.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Borst et al. (hereinafter Borst), Bell Labs Technical Journal, "Wireless Simulation and Self-Organizing Spectrum Management", Vol. 2, No. 3, 1997, pp. 81-98 in view of Greene, Sr. et al. (hereinafter Greene) (US 5,926,763).

Regarding **Claim 27**, Borst teaches of having a plurality of base stations, each base station receiving produced lists from the processor (see pg. 83, right col., lines 5-14; pg. 84, right col., lines 17-31; Figs. 1-3), where the base stations uses the list to allocate channels to mobile unit in the sectors. Borst fails to disclose that each base station has a data storage device. However, the examiner maintains that each base station has a data storage device was well known in the art, as taught by Greene.

In the same field of endeavor, Greene teaches that each land station (12) which reads on the claimed "base station" has a memory (50) which reads on the claimed "data storage device" (see col. 7, lines 15-17,31-44; Figs. 3-7), where the memory stores a list of channels in a table for the base station.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Borst and Greene for each base station to have a data storage device, in order to have a cellular communication system in which voice channels usage is biased to rank potentially higher quality channels over potentially lower quality channels as taught by Greene.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (703) 305-8636. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJD,JR/wjd,jr
15 July 2004

7/16/04
LESTER G. KINCAID
PRIMARY EXAMINER